Weekly Report #2

Group Nr. 21: "Face Reconstruction"

February 15, 2022

1 Weekly Progress

Dataset: We have kickstarted our development process. We found a better dataset, FaceGrabber [**?**], which captures videos containing faces by Kinect. We are able to read the RGB-D image data from Kinect and generate a 3D point cloud for each frame.

Face Detection: Using the DLib library, we are able to locate the face in the image for an initial registration

- Tong Yan Chan (03722291): Conducted research, set up pipeline to read RGBD data and generate 3D point clouds.
- Dushyant Anirudhdhabhai Dave (03728740): Performed research from materials. Explored Dlib library.
- Daniel Schubert (03666228): Research on possible parametric facial models (eg. blendshapes)
- Chang Luo (03759570): DLib & OpenCV setup for facial detection

2 Problems

We are struggling to plan how we will implement the parametric face models. We do not yet fully understand what different kinds of parametric models there are and how we want to optimize the models to the shape scanned by the depth camera. (Model optimization before the non-rigid ICP)

3 Plan

The next steps we plan for our project are:

- Having a merry Christmas and a happy new year
- Sourcing a basic facial model for rigid ICP
- Combine all the parts we currently have into a pipeline that places the face model rigidly in the correct location
- Continue researching on the optimization of parametric facial models

References